Amendments to the Specification:

Applicant submits the following replacement paragraphs.

At Page 11, lines 8 – 16, please insert the following replacement paragraph:

The present invention is a versatile digital cable system that comprises a hardware platform configured to run a plurality of applications for a two-way broadband system. Referring to FIG. 2 there is shown a comparison between an illustrative traditional piecemeal digital headend 50 and a digital headend 100 of the present invention which is also referred to as a highly integrated computer controlled headend 100. The illustrative prior art digital cable headend hardware system 50 comprise isolated pieces of equipment such as an isolated CMTS system 52, an isolated Video-on-Demand system 54, an isolated Bi-directional signaling system 56, a digital video system 58, a voice over IP system 60, and a plurality of upconverters 62, an IP router 64 and a LAN switch 66. ~~voice over IP system, and a plurality of upconverters 60, an IP router 62 and a LAN switch 64.~~

At Page 13, lines 7 – 18, please insert the following replacement paragraph:

The highly integrated computer controlled headend 100 is an element of a system which will likely include a NOC (not shown), a headend system combiner 114, an analog headend 115, a distribution network 116, and a plurality of set-top boxes 118a through 118n. The headend system combiner 100 is operatively coupled to the highly integrated computer controlled headend 100 and the analog headend 115. The analog headend 115 receives broadcast signals from satellite transmissions 96 or from off-air antenna transmissions 98 ~~transmissions 120 or from off-air antenna transmissions 122~~. Furthermore, the headend system combiner is configured to combine the signals generated by the analog headend 115 with the signals generated by the highly integrated computer controlled headend 100. The headend system combiner is also operatively coupled to the distribution network 116 which includes a plurality of amplifiers, nodes, coaxial cable and/or optical fiber to distribute output from the headend system combiner 114 to one or more set top boxes 118a through 118n.

At Page 15, lines 13 – Page 16: line 2, please insert the following replacement paragraph:

The downstream content which is processed by the highly integrated computer controlled headend 100 is generated by a network operations center (NOC) 102 ~~(NOC)104~~, a satellite or off-the-air broadcast 106, an Internet Portal 108, a local telephone company portal 110 and a long distance telephone company portal 112. The NOC 102 ~~NOC 104~~ provides a variety of different types of information which include content streams for the highly integrated computer controlled headend 100, security procedures such as cryptography, billing information, and post processing work. The satellite or off-the-air broadcast 106 provides the video signals which are communicated using well known RF signalling methods. The portals, i.e. Internet portal 108, local telephone company 110 and long distance telephone company 112, receive and transmit information to the highly integrated computer controlled headend 100.

At Page 16, lines 4 – 12, please insert the following replacement paragraph:

An Internet processing and management system 122 is in communication with the NOC 102 ~~NOC 104~~ and the Internet portal 108. A telephone processing and management system 124 is in communication with the NOC 102 ~~NOC 104~~, the local telephone company portal 110 and long distance phone company portal 112. Well known Internet and telephone processing and management systems 122 and 124, respectively, have been developed by companies such as Cisco Systems and Texas Instruments. The Internet process and management system 122 provides processing and management for Internet data. The telephone process and management system 124 provides processing and management of either switched telephony or VoIP signals.

At Page 18, line 8 – line 15, please insert the following replacement paragraph:

A service computer 132 is in communication with the NOC 102 ~~NOC 104~~. The service computer 132 performs the function of managing the conditional access, billing and configuration management. Configuration management determines the type of equipment deployed and its maintenance history. The service computer is a robust dedicated general purpose computer. Communications with the shared bus system 132 are accomplished with a Smart NIM 134 which provides appropriate buffering to optimize communications along the Compact PCI bus 120 as described in the body of this specification.

At Page 18, line 17 – Page 19: line 5, please insert the following replacement paragraph:

An MPEG content computer 136 receives the satellite 104 and off-the-air signals 106 and converts these analog signals to digital video signals using, preferably, an MPEG digital format. The MPEG content computer 136 also receives ad insertion feeds and converts these feeds to a digital content stream which are inserted into the local (off-the-air) content and the satellite feed content 106. The digital content generated by the MPEG content computer 136 is then fed to a 10/100 BaseT interface which, preferably, provides a MPEG-2 transport stream to a smart NIM 138. Additionally, the digital content generated by the MPEG content computer 136 is also fed to a DVB-ASI/SPI interface 140 ~~interface~~ operatively coupled to a smart NIM 141 ~~smart NIM 138~~ which also uses a MPEG-2 transport stream. As previously described, the smart NIM provides the first level buffering which optimizes the bus transfer rate to the shared bus 120.

At Page 19, line 20 – Page 20: line 3, please insert the following replacement paragraph:

The video server 144 receives content from the NOC 102 ~~NOC 104~~or from the MPEG content computer 136. The video server 144 provides local storage for digital video. As previously described, the video server 144 is managed by the control computer 142. The output from the video server 144 is communicated to smart NIMs 148 and 150. The smart NIMs 148 and 150 provide the first level buffering which optimizes the bus transfer rate to the shared bus 120.

At Page 19, line 7 – line 18, please insert the following replacement paragraph:

The control computer 142 receives control information provided by the NOC 102 ~~NOC 1044~~. The control information includes a program guide, generated at the NOC 102 ~~NOC 104~~, which is communicated by the highly integrated computer controlled headend 100 to a plurality of set-top boxes 118a through 118n. The control computer 142 also performs the real-time functions of content management and resource allocation for the MPEG content streams. The control computer 142 is a relatively quick and robust computer system compared to the service computer 122. The content management regulated by the control computer 142 comprises the MPEG content from a video server 144 and the MPEG content computer 136. The resource allocation provided by the control computer 142 manages system resources for the highly integrated computer controlled headend 100. The control computer is operatively coupled via a 10/100 BaseT interface to a smart NIM 146 which is operatively coupled to the shared bus 120.

At Page 23, line 19 – Page 24: line 6, please insert the following replacement paragraph:

A downstream combiner 172 receives the output from upconverter 162a through 162n and 170 performs the function of combining downstream signals. The downstream combiner 172 is an isolation device which sets gains for downstream transmission, i.e. tilt compensation, and provides system reliability with diagnostic tools. The downstream combiner 172 includes a plurality of passive and active devices which combine the upconverter 162a through 162n and 170 output. Preferably, the downstream combiner 172 ~~combiner 178~~ monitors the "health" of each downstream encoder 160a through 160n ~~thorugh 160n~~, the downstream out-of-band QPSK transmitter 166, and their respective upconverters 162a through 162n and 170.

At Page 47, line 3 – line 18, please insert the following replacement paragraph:

~~The present invention provides a method~~ A method for combining ~~a plurality of~~ digital video signals, ~~a plurality of~~ digital data signals, ~~a plurality of~~ voice signals, and ~~a plurality of~~ upstream communications within a digital broadband headend. This digital broadband headend uses a common shared bus to optimize the resources used on a digital headend. ~~More particularly, the method~~ The method comprises providing a video interface for receiving the ~~plurality of~~ digital video signal, providing a data interface for receiving the ~~plurality of~~ digital data signals, and providing a voice interface for receiving the ~~plurality of~~ voice signals. The method then proceeds to buffer the ~~process the plurality of~~ digital video signals, digital data signals and voice signals, and communicate these buffered signals across a common shared bus. ~~After this processing is completed by the digital headend, the plurality of digital video signals is communicated to at least one smart network interface module which is configured to buffer the plurality of digital video signals. Additionally, the plurality of digital data signals is also buffered with at least one smart network interface module. Further still, the plurality of voice signals is also buffered with the at least one smart network interface module. The method then provides for communicating said buffered plurality of digital video signals, said buffered plurality of digital data signals, said~~

~~buffered plurality of voice signals, and said plurality of upstream communications across a common shared bus.~~